Amendments to the Claims

Please amend claims 1, 47, 85 and 86, all as shown below. All pending claims are reproduced herewith, including those that remain unchanged.

1. (Currently Amended): A data processing system comprising a data storage device and a processor programmed to read data from, and write data to, said storage device, in which said storage device stores:

a) multiple operation records each storing data relating to one or more historical operation involving at least one entity, each said operation record comprising data recording the operation, and data defining a date associated with the operation;

each said entity being an identifiable thing within a business or other undertaking to which information resulting from a transaction, measurement or other such assignment can be related; and

b) each said entity being represented by a single corresponding entity record, said ~~multiple~~ entity records storing data indicating relationships between said entities, and each said relationship being associated with a historical period of validity.

2. (Original): The system of claim 1, wherein the processor is programmed to extract output data from a subset of said operation records, and to output said output data.

3. (Original): The system of claim 2, wherein the processor is programmed to select said subset by the steps of:

inputting instructions defining one or more selected entities for which said output data relates; and

selecting said subset based on both the dates stored in said operation records and the historical periods of validity associated with the selected entities.

4. (Original): The system of claim 3, wherein the processor is programmed to select said subset to represent by the steps of:

inputting an analysis date;

for the selected entities, selecting the entity relationships which have associated historical periods of validity within which said analysis date lies; and

selecting said subset using those selected entity relationships.

5. (Original): The system of claim 4, wherein the processor is programmed to offer the current date as a date option, to permit analysis of operation records anterior to that date as if the current relationship between entities had previously existed.

6. (Previously presented): The system of claim 4, wherein the processor is programmed to offer an anterior date as a date option, to permit analysis of operation records posterior to that date as if a historical relationship between entities still persisted.

7. (Previously presented): The system of claim 3, wherein the processor is programmed to analyse each operation record in accordance with the relationships between entities which have associated historical periods of validity within which the date of that operation record lies.

8. (Original): The system of claim 1, wherein the processor is programmed to input a change from an existing said relationship between entities to a new said relationship.

9. (Original): The system of claim 8, wherein the processor is programmed, on such a change, to store an end date for the period of validity of the existing relationship; to create a record of the new relationship, and to store a start date therefor.

10. (Original): The system of claim 1, wherein the entity records comprise:

an entity record for each entity; and

an association record for each past or present relationship between a pair of said entities;

each said entity record containing data representing its historical period of validity.

11. (Previously presented): The system of claim 1, wherein the entity records comprise a hierarchical structure, in which at least a first entity record relates to a specific entity, and a second to a more generic entity encompassing said specific entity, said entity records including link data linking said first and second entity records whereby to allow said processor to traverse said hierarchy.

12. (Original): The system of claim 11, wherein the entity records represent first and second successive levels of hierarchy of an organisation.

13. (Original): The system of claim 11, wherein the entity records represent first and second successive levels of hierarchy of a product family.

14. (Previously presented): The system of claim 11, wherein the processor is programmed to extract output data from a subset of said operation records, and to output said output data,

wherein the processor is programmed further to select said subset by the steps of:

inputting instructions defining one or more selected entities for which said output data relates; and

selecting said subset based on both the dates stored in said operation records and the historical periods of validity associated with the selected entities,

and wherein said processor is programmed further to:

input a historical analysis period; and

determine, for said operation records within said period, if said operation records relate to said selected entities throughout the whole of said period.

15. (Original): The system of claim 14, wherein, if said operation records do not span the whole of said period, for each selected said entity to which the operation records relate, the processor is programmed to determine, from said entity records, a hierarchically higher entity and to repeat said determination and, in the event that said operation records relate to said hierarchically higher entity throughout the whole of said period, to use said hierarchically higher entity instead of said selected entity in selecting said subset of operation records.

16. (Previously presented): The system of claim 1, in which said storage means contains multiple sets of said operation records, each said set comprising multiple said operation records, said sets relating to different classes of operations and said records within each set relating to different instances of the same type of operation.

17. (Original): The system of claim 16, in which each said operation record contains at least one variable data field storing a value of a measure from a range of possible said values for said measure.

18. (Previously presented): The system of claim 16, in which said storage means further contains:

c) metadata comprising multiple operation definition records, each defining the format of records of a respective said set of operation records.

19. (Previously presented): The system of claim 18, in which each said operation record contains at least one variable data field storing a value of a measure from a range of possible said values for said measure,

and in which each operation definition record indicates the units of said measure.

20. (Previously presented): The system of claim 16, in which said storage means further contains:

c) metadata comprising multiple unit definition records, defining the relationship between different said units.

21. (Original): The system of claim 17, wherein the processor is programmed to:

input at least one measure derivable from said operation records, to be analysed;

determine, for each said set of operation records, whether said measure can be derived therefrom; and,

where said measure could be derived from alternative said sets, select one of said sets.

22. (Previously presented): The system of claim 21, wherein said selection is based at least in part on the relative sizes of said sets.

23. (Previously presented): The system of claim 21, wherein said selection is based at least in part on the relative difficulty of deriving said measure from the data stored in the variable data fields of each of said sets.

24. (Original): The system of claim 17, wherein the processor is programmed to:

input at least one measure derivable from said operation records, to be analysed;

determine, for each said set of operation records, whether said measure can be derived therefrom; and,

where necessary, derive said measure from a combination of a first value from a variable data field of a record of a first set of operation records, and a second first value from a variable data field of a record of a second set of operation records.

25. (Original): The system of claim 17, wherein the processor is programmed to:

input at least one measure derivable from said operation records, to be analysed;

determine, for each said set of operation records, whether said measure can be derived therefrom; and,

where necessary, derive said measure from an aggregation of first values from respective variable data fields of a plurality of records of a first set of operation records, having dates spanning a predetermined input time interval.

26. (Original): The system of claim 1, wherein said operation records relate to respective transactions between said entities.

27. (Original): The system of claim 26, wherein said transactions are sales, inventory, or purchase transactions.

28. (Previously presented): The system of claim 1, wherein said processor is programmed to load one or more new said operation records into said storage device.

29. (Previously presented): The system of claim 18, wherein said processor is programmed to load one or more new said operation records into said storage device,

and in which said processor is programmed to determine whether said new operation records comply with said metadata.

30. (Original): The system of claim 18, in which said processor is programmed to input said metadata.

31 - 46 (Canceled):

47. (Currently Amended): A data storage device storing a data structure comprising:

a) multiple operation records each storing data relating to one or more historical operation involving at least one entity, each said operation record comprising data recording the operation, and data defining a date associated with the operation;

each said entity being an identifiable thing within a business or other undertaking to which information resulting from a transaction, measurement or other such assignment can be related; and

b) each said entity being represented by a single corresponding entity record, said ~~multiple~~ entity records storing data indicating relationships between said entities, and each said relationship being associated with a historical period of validity.

48. (Previously presented): A data processing system comprising a data storage device and a processor programmed to read data from, and write data to, said storage device, in which said storage device stores multiple operation records each storing data relating to one or more historical operation involving at least one entity, each said entity being an identifiable thing within a business or other undertaking to which information resulting from a transaction, measurement or other such assignment can be related; and multiple entity records storing data indicating relationships between said entities, wherein the entity records comprise a hierarchical structure, in which at least a first entity record relates to a specific entity, and a second to a more generic entity encompassing said specific entity, said entity records including link data linking said first and second entity records whereby to allow said processor to traverse said hierarchy, said processor being arranged to generate output data by inputting instructions defining one or more selected entity dimensions across which said output data is to be distributed.

49. (Original): The system of claim 48, wherein, if all required said operation records do not relate to entities of the dimension to which the operation records relate, the processor is programmed to determine, from said entity records, a hierarchically higher level entity dimension and to repeat said determination and, in the event that all required said operation records relate to said hierarchically higher level, to use said hierarchically higher entity instead of said selected entity in selecting said subset of operation records.

50. (Original): The system of claim 48, wherein the processor is programmed to:

input at least one measure derivable from said operation records, to be analysed; and determine, for each said set of operation records, whether said measure can be derived therefrom; and, where said measure could be derived from alternative said sets, select one of said sets.

51 - 82 (Canceled):

83. (Previously presented): A data processing system comprising a data storage device and a processor programmed to read data from, and write data to, said storage device, in which said storage device stores a time variant data model to which data in a data structure conforms, the data model generated by the processor and representing the relationships between a plurality of classes of entities, said storage device further storing:

a) multiple operation records each storing data relating to one or more historical operations involving at least one said entity conforming to one of said classes, each said operation record comprising data recording the operation, and data defining a date associated with the operation, each said entity being an identifiable thing within a business or other undertaking to which information resulting from a transaction, measurement or other such assignment can be related; and

b) multiple entity records and association records which conform to the data model, each of the multiple entity records comprising an entity record for each said entity conforming to one of said classes, said association records storing data indicating past or present relationships between a pair of said entities, and each said entity record containing data associating each said relationship with a historical period of validity.

84. (Previously presented): A data processing system comprising a data storage device and a processor programmed to read data from, and write data to, said storage device, in which said storage device stores multiple operation records each storing data relating to one or more historical operation involving at least one entity, each said entity being an identifiable thing within a business or other undertaking to which information resulting from a transaction, measurement or other such assignment can be related; and multiple entity records storing data indicating relationships between said entities, wherein the entity records comprise a hierarchical structure, in which at least a first entity record relates to a specific entity, and a second to a more generic entity encompassing said specific entity, said entity records including link data linking said first and second entity records whereby to allow said processor to traverse said hierarchy, said processor being arranged to generate output data by inputting instructions defining one or more selected entity dimensions across which said output data is to be distributed; and if all required said operation records do not relate to entities of the dimension to which the operation records relate, the processor is programmed to determine, from said entity records, a hierarchically higher level entity dimension and to repeat said determination and, in the event that all required said operation records relate to said hierarchically higher level, to use said hierarchically higher entity instead of said selected entity in selecting said subset of operation records.

85. (Currently amended): A data processing system comprising a data storage device and a processor programmed to read data from, and write data to, said storage device, in which said storage device stores:

a) multiple operation records each storing data relating to one or more historical operation involving at least one entity, each said operation record comprising data recording the operation, and data defining a date associated with the operation;

b) each said entity being an identifiable thing within a business or other undertaking to which information resulting from a transaction, measurement or other such assignment can be related, and each being represented by a single corresponding entity record; and

c) multiple entity relationship records storing data indicating relationships between said entities, and each said relationship being associated with a historical period of validity;

wherein the processor is programmed to extract data from a subset of said operation records and select said subset by the steps of:

inputting instructions defining one or more selected entities for which said output data relates; and

selecting said subset based on both the dates stored in said operation records and the historical periods of validity associated with the relationships of said selected entities.

86. (Currently amended): A data processing system comprising a data storage device and a processor programmed to read data from, and write data to, said storage device, in which said storage device stores:

a) multiple operation records each storing data relating to one or more historical operation involving at least one entity, each said operation record comprising data recording the operation, and data defining a date associated with the operation;

b) each said entity being an identifiable thing within a business or other undertaking to which information resulting from a transaction, measurement or other such assignment can be related, and each being represented by a single corresponding entity record; and

c) multiple entity relationship records storing data indicating relationships between said entities, and each said relationship being associated with a historical period of validity;

wherein the processor is programmed to extract data from a subset of said operation records and select said subset to represent by the steps of:

inputting an analysis date;

for the selected entities, selecting the entity relationships which have associated historical periods of validity within which said analysis date lies; and

selecting said subset using those selected entity relationships.

87. (Previously presented): A data processing system comprising a data storage device and a processor programmed to read data from, and write data to, said storage device, in which said storage device stores two types of data;

the first type of data being transaction data;

the second type of data consisting of metadata and data associated with at least one entity, said entity being an identifiable thing within a business or other undertaking to which information resulting from a transaction, measurement or other such assignment can be related;

both said metadata and said data associated with at least one entity having a historical period of validity associated with it.

88. (Previously presented): The system of claim 83, wherein the data model comprises a hierarchical structure, in which at least a first class of entity record relates to a specific class of entity, and a second to a more generic class of entity encompassing said specific class of entity, said class of entity record including link data linking said first and second classes whereby to allow said processor to traverse said hierarchy.

89. (Previously presented): The system of claim 88, wherein said processor is arranged to generate output data from selected operation records by: inputting instructions; locating one or more selected classes of entity corresponding to said instructions; determining whether the selected operation

records may be determined from said selected classes of entity, and, if not, determining a higher level class of entity and repeating said determination.

90. (Previously presented): The system of claim 83, wherein the hierarchy is traversed using metadata records in order to determine the subset of operation records.

91. (Previously presented): The system of claim 83, wherein the system is arranged to accept new metadata whilst keeping old metadata.